

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

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In the Matter of)

The Development of Operational,)
Technical and Spectrum Requirements)
for Meeting Federal, State and Local)
Public Safety Agency Communication)
Requirements Through the Year 2010)

Establishment of Rules and)
Requirements for Priority Access)
Service)

WT Docket No. 96-86

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

COMMENTS OF THE U.S. GPS INDUSTRY COUNCIL

The U.S. GPS Industry Council ("the Council"), through undersigned counsel, hereby submits Comments in the above-referenced proceeding. The Council is comprised of American companies which work with and promote primarily civil applications of the Global Position System ("GPS") designed and implemented by the U.S. military. The primary purpose of the Council is to promote sound policies for the development of commercial markets in civilian applications of GPS technology, while preserving military advantages of this system. Accordingly, the Council wishes to bring to the Commission's attention that certain aspects of the spectrum allocations discussed in this proceeding could have an impact on existing GPS operations in the United States. These comments are preliminary views which serve only to apprise the Commission of potential interference concerns. The Council and the individual entities which comprise

049

it will continue to study the issues discussed below, as well as take note of the comments filed by other parties in this proceeding, and reserves the right to respond to these comments.

The overall objective of this rulemaking proceeding has been to address the deficiencies which exist in today's public safety wireless communications systems, including deficiencies in the spectrum made available for these purposes. The Council strongly supports all efforts by the Commission to address the critical concerns of communications networks serving all aspects of civilian safety of life telecommunications services. The members of the Council know well the needs of this community of service providers since civil GPS technology is today a critical component of many safety of life services. GPS signals are critical in low-visibility maritime operations in harbors and coastal waterways, and GPS signals guide police and emergency rescue personnel to accident locations in major urban areas. For example, police, fire, and ambulance: American Medical Response (AMR); Houston Fire Department, Phoenix Fire, and Schaumburg Police Department. In addition, in the United States, GPS is increasingly becoming the primary means of air navigation in the future. Use of this technology by commercial aviation is so widespread that the Federal Aviation Administration has stopped deploying new microwave landing systems and is basing its instrument landing of aircraft on this technology. Further, GPS timing signals are the principal means of synchronizing national telecommunications networks and digital data transmissions.

Among the spectrum allocations proposals under consideration in this proceeding is the possibility of using frequency band 746-806 MHz for wireless public safety services. While portions of this band may be well suited for these services, the Council notes that in the absence of appropriate sharing criteria, the second harmonic of radio transmissions in the band 779.5-805 MHz fall within the radionavigation frequency band 1559-1610 MHz. This band is used by the U.S. radionavigation satellite system — GPS — to provide many safety services that are entitled to protection from other users of the spectrum. Our preliminary analysis indicates that the use of the 779.5-805 MHz band for wireless mobile communications services, even in the case of safety services, could increase the possibility that second harmonic interference will adversely affect aircraft or marine vessels operating with the worldwide navigation system. The same interference could also affect most other civilian applications of GPS receivers less sophisticated than those used in aviation or maritime applications. Many of the GPS receivers in use today for police, rescue and other public safety of life services fall into the latter category. It would indeed be ironic if a public safety wireless telecommunications use of this band would cause interference to the many safety of life applications being served by GPS receivers in place today.

The Council concurs in the suggestion of ARINC in its comments in a related rulemaking proceeding¹ that in reallocating TV channels 65 through 69, more

¹ See Comments of ARINC in ET Docket 97-157, dated September 15, 1997,
(continued...)

specifically the band 779.5-805 MHz, to public safety mobile service applications, that the Commission must be careful to protect the satellite radionavigation service operating in the band 1559-1610 MHz. We also concur with ARINC's observation that while analog television broadcast stations currently using the band are much higher in power than would be the mobile systems, today's broadcast stations are located at a few fixed locations and that television stations typically suppress out-of-band emissions substantially more than required by the Commission in order to improve video performance.²

Current rules in Part 90 concerning emission masks and permissible transmitter power would indicate that the spurious emissions in the band 1559-1610 MHz could be in the range of -42 to -50 dBW for the mobile units and -35 to -43 dBW for the base stations, depending on the actual power of the unit and the emission mask used for systems operating in the band 779.5-805 MHz.³ Spurious emissions at these levels in the band 1559-1610 MHz would interfere with GPS operations, including critical aviation applications, and possibly impair most other safety applications of GPS technology.

It is anticipated that many, if not most of the radios operating in the proposed band for the public safety market, will simultaneously be using GPS on the

¹(...continued)
at 2.

² Id. at 3.

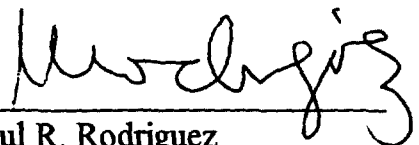
³ See 47 C.F.R. § 90.210.

same vehicles. Therefore it is imperative that a systems solution to the GPS/communications problem be engineered. As long as this is done, ensuring the appropriate rules for second harmonic suppression are established, it may be possible to reallocate a portion of the current radionavigation satellite band for other public safety uses.

The Council and its individual members stand prepared to work with the Commission and the public safety community to identify the true nature of this potential interference problem, and to assess if and how the second harmonic phenomenon can be mitigated through the use of appropriate technical sharing criteria. We look forward to reviewing the comments submitted by the public safety community in this area and what suggestions may be put forward on sufficient out-of-band suppression of the second harmonic to protect operation of radionavigation satellite services in the band 1559-1610 MHz. We fully support the further study of this issue.

Respectfully Submitted,

THE U.S. GPS INDUSTRY COUNCIL

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